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29th Biennial Report

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CONTENTS

	PAGE
Letter of Transmittal.....	1
Organizational Chart.....	2
Highway Officials.....	3
Foreword.....	4
Construction.....	5
Maintenance.....	6
Equipment.....	7
Materials and Testing.....	8
Architecture.....	9
Safety.....	9
District Map.....	10
Communications.....	11
District 1.....	11
District 2.....	11
District 3.....	12
District 4.....	12
District 5.....	13
District 6.....	13
Planning.....	14
Urban Studies.....	14
Advanced Engineering.....	14
Special Studies.....	15
Location.....	15
Road Design.....	16
Roadside Development and Environmental Services.....	17
Traffic Engineering.....	17
Structural Design.....	17
Right-of-Way.....	18
Programming and Project Management.....	19
Legal Services.....	19
Industrial Relations.....	20
Data Processing.....	21
Purchasing and Stores.....	21
Administrative Services.....	22
Accounting and Auditing.....	22
Highways and Parks Magazine.....	23
Public Information.....	23
Department Officials.....	24

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LETTER OF TRANSMITTAL

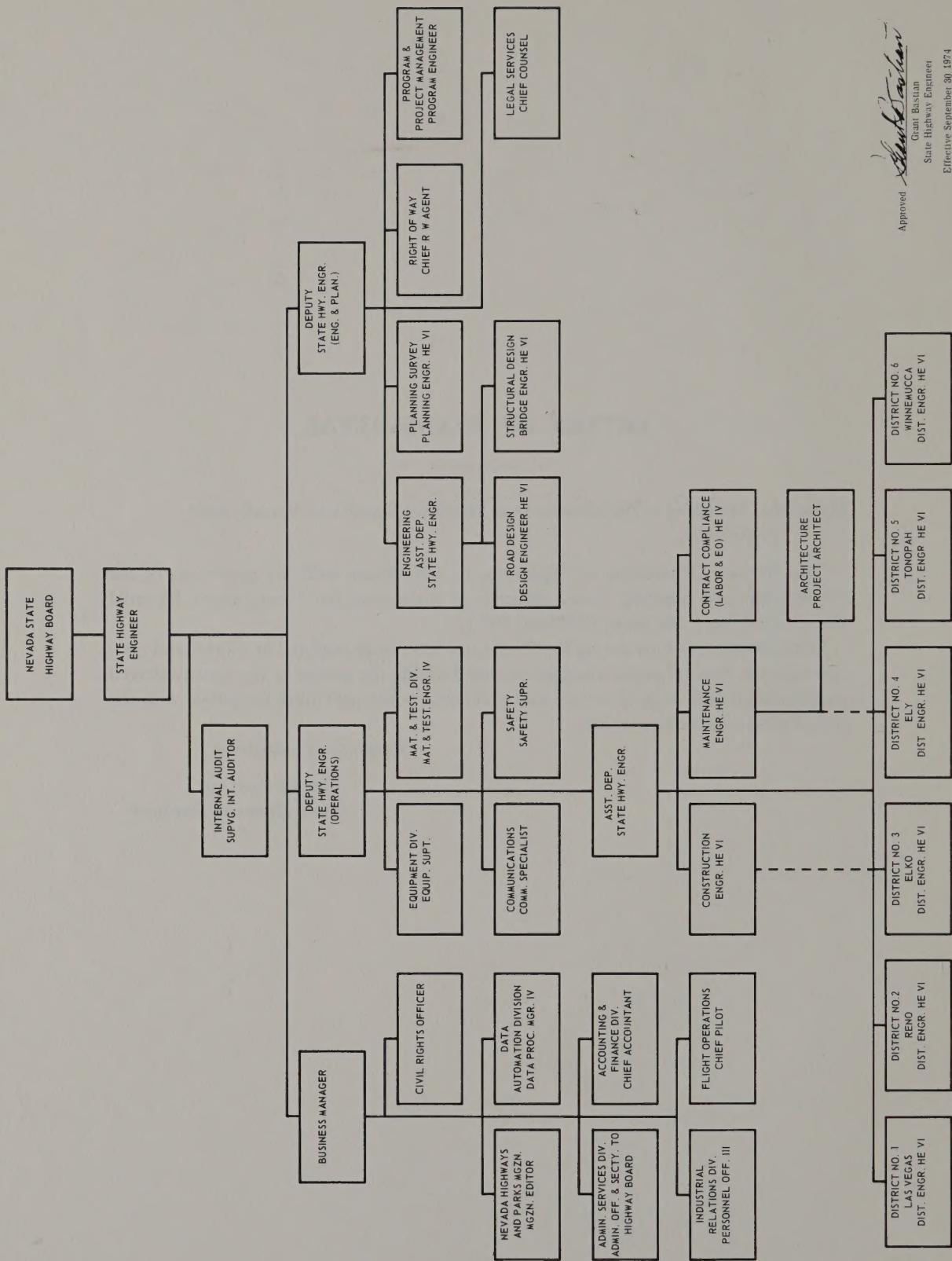
*Honorable Members of the Nevada State Highway Board and Nevada State
Legislature:*

The Nevada Department of Highways, in accordance with the provisions of the Nevada Revised Statutes, takes pleasure in presenting its Twenty-ninth Biennial Report covering fiscal years 1973 and 1974.

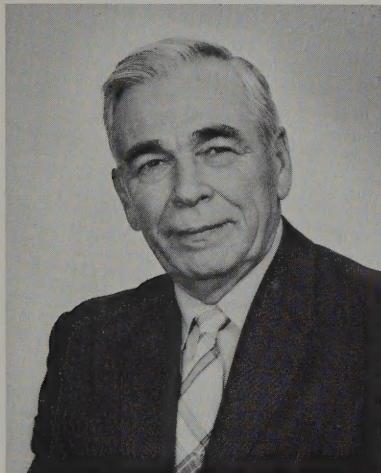
Department activities during that biennium have been outlined in a brief and concise manner. Several major changes occurred during the period as the agency strived to maintain a high level of service and excellence while providing the public with the best highway facilities possible.

Respectfully submitted,

GRANT BASTIAN
State Highway Engineer

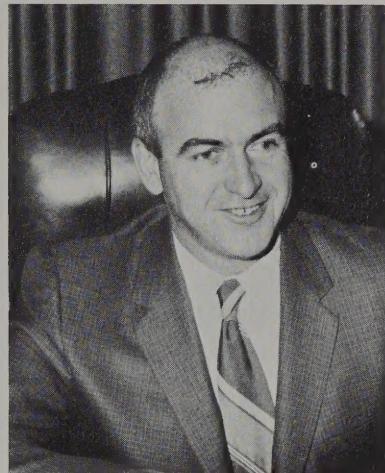


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Business Mgr.

FOREWORD

During the past two years the Nevada Highway Department experienced one of its most critical periods to date. Midway through the biennium, the agency found itself in dire financial circumstances and faced with taking extreme measures to assure a balanced fiscal program for the remainder of the period.

Despite the resulting cutback in personnel and programs the Department maintained a remarkably high level of activity. Several organizational changes occurred to accommodate the reduction in employees and to meet new and more demanding federal requirements.

Retirements and reorganization resulted in the appointment of a number of new division heads and assistants. Added emphasis was given the planning and environmental aspects of the highway program. Attention was focused on increasing public involvement, and renewed efforts were directed toward improving the effectiveness of citizens' advisory groups.

A management information system was developed and implemented to upgrade the maintenance program. Procedures and organization were modified to increase the timeliness and capabilities of the accounting function.

As with all other governmental agencies, inflation created the greatest problem as costs increased much faster than revenues. Compounding this fiscal crisis were the results of the fuel shortage during the last six months of the biennium. And as the period closed the Highway Department saw little relief in bridging the ever-growing gap between needs and the financial ability to meet them.



CONSTRUCTION

During the biennium, the Construction Division continued its policy of maximum control and responsibility at the district and project levels. Headquarters staff maintained close contact with field supervisors and provided technical assistance and support for the district and resident engineers.

Increased construction costs and some reduction in field activity resulted in a decrease in permanent personnel. During the biennial period, construction employees averaged 180 compared to 220 during the 1971-72 biennium. At the same time, the summer employment and cooperative engineering student programs were eliminated because of cutbacks in financing levels.

The major project completed during this period was the \$10 million Carlin Canyon tunnels on Interstate 80 west of Elko. It represented the largest contract yet awarded by the Department and the first tunnels to be built on Nevada's freeway system. Although completed as the biennium closed, the tunnels will not be operative until roadway connections to them are constructed. Traffic should be able to use the new facility by the summer of 1975.

With the prospect of increasing costs and decreasing revenues facing the construction program, the Division began reviewing the need for a manpower management system. Plans were being developed for a preliminary study to determine what type of program would best

meet the needs of not only construction but all engineering functions in the agency.

Reduced field activity resulted in the transfer of 20 personnel from construction crews into headquarters design, planning, and environmental sections. Attrition, too, lowered the manning levels.

Responsibility for the Equal Opportunity Program was assigned to the Division's Labor Compliance Office with the loss of the Department's Equal Opportunity Coordinator at the beginning of the biennium. The two operations were combined and the Labor Compliance Officer assumed direction of both activities.

Monitoring the agency's Title VI Civil Rights Program became a function of this office. During the early part of 1974, the Department finalized its Title VI Plan for submission to the Federal Highway Administration. Final approval was due as the biennial period ended.

An annual report on the activity and progress of the Equal Opportunity Program was prepared and submitted to the Federal Highway Works Administration in 1973 and 1974 in cooperation with the Industrial Relations and Public Information offices.

The Labor Compliance Office also worked jointly with construction contractors and their association to initiate an on-the-job teamsters training program. Because of its success, this training currently is being used in lieu of the Teamsters' Apprenticeship Program on highway construction projects.

MAINTENANCE

Maintenance operations during the biennium were under austerity type controls due to reduced revenue resulting from the fuel shortage. In an effort to keep the maintenance budget within limits required by the anticipated reduction in revenue, a number of reductions in the maintenance program were necessary.

The most difficult reduction necessary was the reduction in the statewide maintenance staff from 518 employees to a low of 447 employees. At the end of the biennium, conditions were improved sufficiently that the maintenance organization was authorized 470 employees.

The contract betterment program was suspended during this biennium. Normally, under this program, a number of projects were selected for widening and/or resurfacing and let to contract using 100 percent state funds. These projects were in addition to those accomplished under existing federal-aid programs.

Betterment projects and the major maintenance activities that require liquid asphalt were reduced due to the reduction in personnel and the increase in the price of liquid asphalt. The price of liquid asphalt increased from less than \$50 per ton early in 1973 to approximately \$100 per ton in 1974. This increase in price applied to the 20,000 tons of asphalt that is normally purchased for the maintenance operation and would amount to an increased expenditure of \$1 million for this one item. Deferred maintenance and betterment programs will have a very serious effect on the highway system if roadway conditions are allowed to deteriorate without some relief in the future.

Due to the austerity program the Maintenance Academy training sessions for maintenance superintendents, supervisors, and foremen were discontinued. These



should be reinstated in the future to insure the smooth and efficient operation of maintenance and organization.

The Maintenance Division, with assistance from the consulting firm of Byrd, Tallamy, MacDonald and Lewis, completed development and implementation of a Maintenance Management System. The original contract amount was \$97,385 and the final amount was \$70,511.24, resulting in a savings of \$26,873.76. This was a refreshing change from the spiraling costs experienced in all other areas. The Management System has already highlighted maintenance activities where savings can be realized that exceed the cost of the consultants' contract.

The Management System provides cost figures to the foremen that were never available in the past. This has resulted in the foremen being more cost conscious.

The system is resulting in a more efficient and business-like approach to managing the maintenance of Nevada's highways. This is extremely important in these times of restricted budgets and spiraling costs.

The cooperative fencing program was continued. Costs for fencing the right-of-way through problem areas, where cattle and horses were a hazard, were shared by the Department, the Bureau of Land Management and/or adjoining ranchers. During the biennium 105 miles of fence were constructed at a cost to the Department of \$98,000.

The State-County Cooperative Road Improvement Program was continued with 140 miles of county road being improved at a cost to the Department of \$350,000. The Department was reimbursed \$150,000 through an appropriation in the State General Fund budget. The Department funds were used primarily to purchase materials or reimburse the county for materials. This was proven to be a very popular and helpful program to the rural counties.



EQUIPMENT

In the past two years, the Equipment Division lost ground as inflation and funding problems slowed equipment replacement and resulted in manpower shortages. Parts for the older units became critical and many were not available or took months to procure. Cost for repair and maintenance of equipment rose sharply because new units were not being purchased under a normal replacement and retirement program. As the biennial period closed, 27 percent of the fleet was 10 or more years old.

During the biennium special emphasis was placed on keeping the equipment fleet operable, despite severe personnel limitations. Overtime, too, was kept to an absolute minimum. As a result, turn-around time for equipment repair increased in some instances.

A major program was successfully completed by the sign shop during the period as the Department implemented a statewide changeover in traffic signing. It was necessary to produce some 1,600 signs to comply with new federal regulations on uniform traffic control devices. This was done with a maximum use of obsolete sign material resulting in a considerable savings to the agency.

Accounting procedures were changed in the shops and stockrooms to improve accuracy and reduce paper work. Procedures also were developed to standardize stock controls statewide.

Inflation was the biggest problem during the biennium as costs for some items, such as traffic striping paint, more than doubled. To offset this, some new equipment was purchased to reduce manpower requirements and improve efficiency. A paint striping machine was acquired that enables a striping crew to increase its production 500 percent while decreasing its personnel by 50 percent. Through faster painting speed and drying time, use of the machine eliminates the need for traffic cones and minimizes traffic control problems during the operation.

A new rotary snow plow was purchased to increase the snow clearing capability of maintenance crews. This, too, was done to offset rising costs and a shortage of maintainers and to reduce the need for overtime.

In the upcoming biennium, equipment repair and replacement will become even more critical. If the scarcity of parts continues, many units will not be available for use on a timely basis, resulting in serious reductions in highway maintenance capabilities.

NEW SIGN POSTS



MATERIALS AND TESTING

The Materials and Testing Division performed a total of 121,801 tests during the 1973-74 biennium.

It became more involved in the testing of water for inclusion in the environmental impact studies necessitating the purchase of a special water test kit. Investigation of the effect of the chloride ion on concrete bridge decks was simplified by the purchase of a special electrode for the pH meter.

Corrosion and chloride tests were performed on all main structures on Interstate 80 and U.S. 395 for possible installation of waterproof membranes. Two men were trained to provide in-house inspection capability for future steel bridges.

The structural section of the Division tested 3,407 concrete cylinders, 1,686 portland cements, 1,714 reinforcing bars, and miscellaneous items, totaling 7,814 tests performed.

The engineering geology and foundation section undertook research on pile type and pile hammers, fill settlement data, seismic refraction instruments and rock-bolt capabilities. In addition, the section conducted 16 bridge foundation studies, 7 roadway foundation studies, 2 material searches, 4 water well studies and 17 special studies.

A new function undertaken by this section was writing the geological portion of the environmental impact statements for the Highway Department. Six of these reports were produced from May of 1973 to July of 1974.

Other sections in the laboratory were very busy during the biennium as evidenced by the following:

Asphalt Laboratory—On a total of 4,373 samples performed 52,667 tests.

Foundation Section—Tested 371 samples while performing 2,100 tests.

Bituminous Mix Design Section—Performed 6,207 tests on 852 samples.

Roadbed Aggregate Section—Tested 9,150 samples for a total of 62,042 tests.

Cement Treated Base—Tested 649 samples.

Soils Section—Had 5,712 samples of material requiring 28,520 tests to be run.

Metallurgical Laboratory—While functioning as a "trouble shooting division" and assisting other sections when needed, was very active in the continuing investigation of the Vine Street structure, and investigating problems with traffic paint. Defective concrete was investigated as to air and mortar content. Laminations in structural steel in the Las Vegas area required considerable time. Deicing salt problems in the Tahoe area



resulted in extensive investigation on soils and conifer needles.

Field Sampling (Exploration) Crews—Developed 91 pit areas, and sampled by auger drilling 2,275 line samples.

Research Section—This relatively new section developed specifications for compacting control of plantmix material using control strip method and nuclear gauges, placing concrete—hot and cold weather. Major investigations were made on the following: (1) rubberized asphalt, (2) concrete strength on selected projects in the Las Vegas area, (3) air quality studies—3 projects in Nevada, (4) skid resistance investigations at three accident locations, (5) comparison of maintenance and surfacing in District 5, (6) pavement rutting, (7) deflection studies and overlay designs on six Interstate 80 projects, (8) use of studded tires, (9) special study of deflection tests in pavement overlay design for the Federal Highway Administration, and (10) calibration procedures for skid testing equipment. Several commercial products were evaluated, such as sealing or rejuvenating chemicals, soil stabilization chemicals, concrete additives, and deicing sand.

The Research Section was responsible for monitoring, training and certifying Department operators of nuclear testing equipment and worked closely with the State Board of Health since radioactive units were involved. A state inventory of skid testing was established with federal funding secured.

The Las Vegas lab tested 4,006 concrete cylinders, 296 asphalts (liquid), and 604 asphalt cements, besides working on gravel, extractions, concrete pipe, concrete cores and miscellaneous items for a total of 5,918 tests.

The Elko laboratory tested all the concrete used in the Carlin Canyon tunnels. Concrete cylinders broken numbered 2,723, concrete beams totaled 261, while other tests run on a variety of materials brought the total to 3,366 tests.

ARCHITECTURE

The Architectural Division, being responsible for the construction of new buildings required by the Highway Department as well as the maintenance of old, suffered a cutback in capital improvement funds for fiscal year 1973-74. After getting one new maintenance complex out to contract, the entire budget of new buildings was deleted. However, maintenance projects continued and after the completion of the maintenance station contract, the entire Division devoted full time to the repair, modification, and upgrading of maintenance stations, equipment shops, and office buildings. Smoky Valley Maintenance Station, started in April and completed in August 1973, was the one new project completed in this biennium. It consisted of a shop building of over 4,600 square feet of floor area, a gasoline service building, and three new residences. The complex also received a new septic sewer system, water system, and fuel distribution system. The total cost of the project was \$267,800.

HEADQUARTERS REMODELING



For the rest of the biennium full time was devoted to maintenance of buildings throughout the State and the remodeling of offices in headquarters. Over \$76,200 has been spent on reroofing, repainting, and upgrading shop buildings and making some of the older residences comply with the latest building code requirements. Work of this type has been done in all six districts. One of the most difficult projects, one that took the most time and one that the Division is still working on, is the rearrang-

ing of partitions in headquarters. To date approximately \$20,000 has been spent on material alone. The Architectural Division, along with headquarters buildings and grounds personnel, have been installing new partitions, rearranging old and creating new office space here in the main building. The Highway Department continues to grow and new space must be created.

Among other things accomplished by this Division was the initiation of a master plan for the orderly placement of maintenance stations throughout the State. Older stations, as they become obsolete, will be phased out and the new ones will be relocated to facilitate the maintenance of new as well as the old roads. By combining some two-men stations it was found that more efficient maintenance stations can be developed. Large stations are planned for Lages, Lund, Majors, and Panaca in District 4, and Carlin and Wildhorse in District 3. These will be constructed over the next 20-year period as the adjacent stations are phased out. A major change in the operation of the Division is the overall master planning of, and the arranging of, its own workload. As a result a continuing maintenance program of all buildings is now in progress and with the help of district carpenters and maintenance personnel, the Division's own people are upgrading existing buildings to comply with all the new building code changes. Another new duty of this Division is the planning and designing of buildings for rest areas. In connection with this, mechanical, electrical, and structural plans of buildings were completed for two rest areas on Interstate 80, Beowawe and Humboldt, to be constructed in the next biennium.

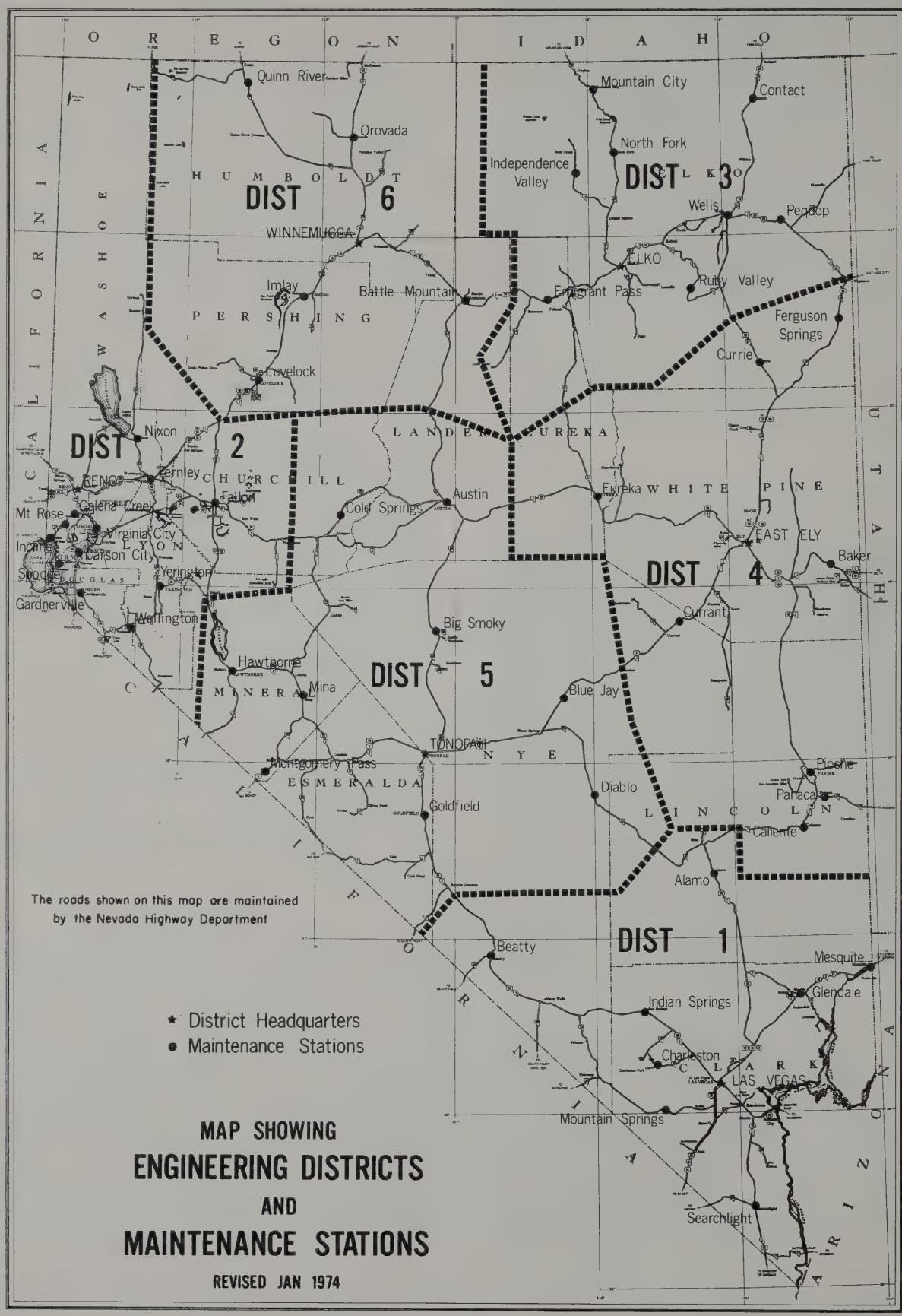
As this biennium closes, plans for two projects are in the preliminary stages: a new maintenance complex for Alamo and a new vehicle storage building for Ely. The Alamo complex should be ready for contract before this fiscal year is over, and the Ely building will follow immediately.

SAFETY

When the State adopted the Occupational Safety and Health Act it became necessary for the Department to increase its emphasis on safety.

The Safety Section became a Division under the Deputy Highway Engineer for Construction and Maintenance. An employee was added in December 1973 to inspect and work with divisions and districts in safety matters, keep required statistics and assist the Safety Director in the overall safety program.

The overall accident rate for the biennial, with the exception of one fatality, showed a great improvement over the previous period.



COMMUNICATIONS

During the last two years the Communications Division serviced 650 mobile radios, 50 base stations, 19 repeater stations, and 10 microwave stations. Plans were made and equipment installed to improve radio coverage in hard-to-reach areas.

The Division worked with the Nevada Highway Patrol toward the completion of a microwave link between Reno and Las Vegas. This involved installation of equipment, erection of towers, hanging microwave antennas and testing of the systems. Additional equipment is being installed to link Tonopah to this system.

This system will provide a "hot line" connection for district offices in Las Vegas, Reno and Tonopah. It also will provide improved control of mountain top repeaters along the western portion of the State in those districts.

Plans have been developed and approved for the completion of a statewide microwave net. This net will tie into the Highway Department microwave system in the eastern part of the State, and the newly completed Highway Patrol Network in the western part of the State.

The completion of the network is expected by the end of 1975, at which time there will be circuits available to all district offices and headquarters for wire and data communications. Additional circuits will be available for control of the Department's VHF system, providing better coverage with less interference.

DISTRICT ONE

A total of 13 contracts that involved 4.3 miles of interstate, 4.5 miles of primary, and 12.2 miles of the secondary system were awarded during the biennium.

Construction activity reveals that 19 contracts were completed and that 28.1 miles of highway were built, including 3.5 miles of interstate, 12.1 miles of primary, and 12.5 miles of the secondary system.

During the fiscal year July 1, 1972 to June 30, 1973, a total of 790,000 gallons of liquid asphalts were used for sealing and betterment work. During the same period 965 tons of premix material were used in maintenance operations.

During the fiscal year July 1, 1973 to June 30, 1974, a total of 294,000 gallons of liquid asphalts were used in sealing and patching operations. During this same period a total of 3,190 tons of premix material were used on maintenance operations.

As of July 1, 1972, there were 208 permanent employees in District One, broken down as follows: 126 District and Shop personnel, 15 Right-of-Way and Utility personnel, and 67 Construction Engineering personnel.



OPENING I-15 IN LAS VEGAS

As of July 1, 1973, the breakdown was as follows: 109 District and Shop personnel, 16 Right-of-Way and Utility personnel, and 55 Construction Engineering personnel.

As of July 1, 1974, the breakdown was as follows: 107 District and Shop personnel, 16 Right-of-Way and Utility personnel, 48 Construction Engineering personnel, and 5 in the Planning Division branch office which was established in the District during the biennium.

DISTRICT TWO

During the biennium, there were 22 construction contracts completed, costing \$17.4 million. Of those, 19 were awarded within the two-year period at a cost of \$14.1 million. In keeping with the increasing emphasis on traffic safety, the District supervised the installation of 11 traffic signal systems.

Maintenance forces were able to resurface 27 miles of interstate freeway, 55 miles of primary highway and 53 miles of secondary roads. At the same time, crews sealed and sanded 262 miles of primary and secondary routes, and flush sealed another 65 miles on the primary and secondary system.

Major betterment work included installation of 1,000 feet of guardrail on State Route 28 at Lake Tahoe, placement of moisture barriers on the McCarran and Parr Avenue interchange structures in the Reno-Sparks area, construction of a soil stabilization test section on State Route 27 at Incline, completion of a truck lane and parking area at the Wadsworth rest area, and installation of new leach lines at the Vista and Wadsworth rest areas.



COMPLETION NORTH-SOUTH FREEWAY

District personnel changes resulted in the retirement of Assistant District Engineer Dick Black and the appointment of Bill Wilke as his replacement, and the loss of 15 employees due to retirement, resignation and termination. None of these positions were refilled in compliance with current Department restrictions on personnel hiring.

DISTRICT THREE

Construction activity during the last two years included the award and/or completion of nine projects totaling \$25.9 million, making this District the most active in the State.

The contracts provided for reconstruction of State Route 51 from North Fork to 9.5 miles north, U.S. 93 from 29 to 38 miles north of Wells, and construction on Interstate 80 in Carlin Canyon, near Beowawe, on Emigrant Summit, in Elko, on Pequop Summit, and between Oasis and Silver Zone Pass.

Largest of the jobs was the Carlin Canyon tunnels which were being finished as the biennium closed. Contracts for the tunnels and their approaches, which were underway during the biennial period, exceeded \$12.2 million in cost.

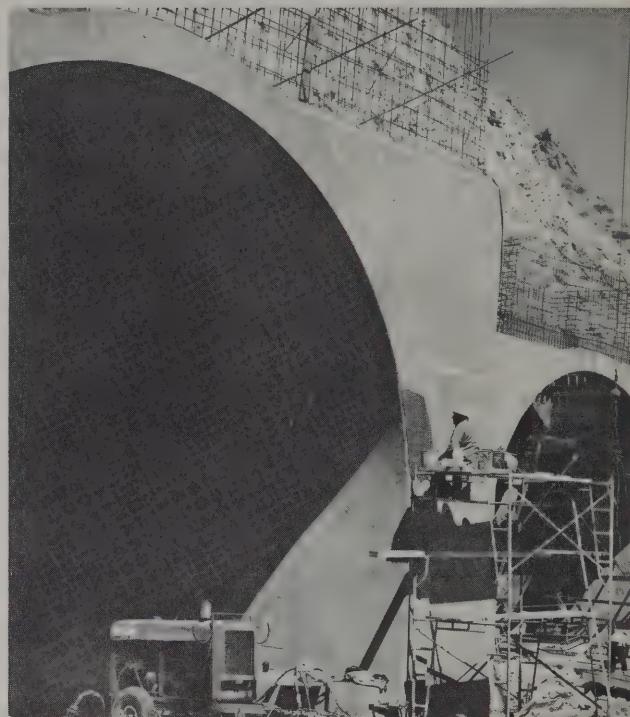
At the same time, maintenance forces completed 59 miles of paving overlays on primary and secondary highways in the District. A new residence was built at the Pequop maintenance station, and the District entered into 68 miles of cooperative fencing agreements with ranchers in the area.

Despite the level of construction activity, the District saw the loss of 35 field engineering personnel by the

end of the biennium. Maintenance crews, too, were cut with the force reduced by four. Equally affected were District training and equipment replacement.

However, employee production remained high. Reflecting this was the recognition given two employees by the Governor's Merit Award Program.

CARLIN CANYON TUNNELS



DISTRICT FOUR

District construction projects during the biennium included improvement of U.S. 93 north of Currie, U.S. 50 in Keystone Canyon west of Ely, and State Route 38 south of Sunnyside. Bid prices on these jobs totaled \$3.9 million.

Several major activities occurred in the maintenance program in the past two years. The station at Geyser was deactivated with the reallocation of manpower to East Ely and Pioche. A residence at the Currie station was remodeled.

Crews flattened slopes and widened shoulders on sections of U.S. 6 near the junction of State Route 38 south of Ely, and at Cummins Lake; and on State Route 25 on Panaca Summit. Nearly 15 miles of cooperative fence were erected on U.S. 6 and State Route 38.

Roadway surface restoration included overlaying 46 miles, sealing and sanding 140 miles, and flush sealing 45 miles of primary and secondary routes in the District.

Cost savings were realized with the purchase of a new paving material mixer. The equipment provides for injecting oil directly into gravel windrows as the material is being mixed, eliminating the need for a special distributor truck. Savings on truck charges nearly paid for the new mixer in the first season it was used.

SUNNYSIDE SHORTCUT



DISTRICT FIVE

Reconstruction of U.S. 95 from north of Coaldale Junction to north of the Esmeralda-Mineral county line was the major construction project completed during the biennium. The 19-mile job cost nearly \$2 million.

Spending restrictions reduced previously planned maintenance activity. Only one maintenance station was improved in the District, the facility on State Route 8A in the Big Smoky Valley northeast of Tonopah.

Maintenance forces were reduced from 68 in July 1972 to 54 in July 1974. Despite this, crews were able

to resurface 28 miles of primary and secondary roads, seal and sand 41 miles, and flush seal 220 miles of roadway surface and shoulders.

Working with the Bureau of Land Management and ranchers 25 miles of cooperative fencing were installed. Personnel also worked on construction of state microwave facilities in conjunction with the Motor Vehicle Department.

With the expansion of the station on State Route 8A, it was possible to transfer one maintainer and 18 miles of roadway for maintenance from the Austin section to Big Smoky.

DISTRICT SIX

During the past biennium, six contracts were awarded and/or completed in the District. The work involved safety improvements, roadside rests, and freeway construction, all on Interstate 80.

Included was 5.1 miles of I-80 just west of Lovelock where work was underway as the period closed, new signing in Pershing and Humboldt counties, and the installation of guardrail, culvert and other safety improvements between Winnemucca and Battle Mountain.

District activity also involved foundation testing for structures and roadway sections planned for the Lovelock and Winnemucca bypasses. Contract prices on the various jobs totaled nearly \$3.5 million.

Maintenance forces were reduced due to fiscal restrictions from 52 permanent and 21 temporary summer employees in 1972 to 48 permanent and 10 summer aides in 1974. A high level of performance was maintained despite the reduction and during the two years 61 miles of highway were overlayed, 106 miles were sealed and sanded, 15 miles sealed and chipped, and 391 miles flush and shoulder sealed.

GREEN SPRINGS SUMMIT



INTERSTATE 80



PLANNING

ADMINISTRATION

The Planning Survey Division completed the first phase of reorganization which now divides the Division into two major elements: Advance Planning and Research, and Location-Photogrammetry. Sections have been restructured and new programs and activities added.

URBAN TRANSPORTATION STUDIES

The Urban Transportation Planning Section in cooperation with the local entities has successfully maintained the continuing phase of the transportation studies for the Las Vegas Valley and Truckee Meadows areas.

Annual reports were published to keep the public informed of current conditions and study accomplishments.

A major 10-year update of the Truckee Study, as required by federal law, is under way, with an update report to be published in early 1976. The major update of the Las Vegas Study will commence in fiscal year 1975.

The Transportation Study for Carson City-Douglas County has completed the inventory and analysis of base year data and conditions and will soon begin testing alternate future transportation systems.

The Tahoe Basin Transportation Study, which is a joint effort by the Nevada Highway Department, California Department of Transportation, and Tahoe Regional Planning Agency, is well under way and will develop an interim plan by April 1975.

The Las Vegas Valley Transportation Study remained in the continuous phase of planning, with the study staff

TAHOE INTERVIEWS



monitoring the growth of both physical and economic features in the valley. The Transportation Plan has been revised and priorities adjusted to meet the needs of this growth where necessary.

In 1973, due to the increasing responsibility of the staff to the local area, the study staff was moved from Carson City to Las Vegas and housed in the District 1 facilities. This required the moving of the study director, the assistant and a planner, while the remainder of the staff was transferred from other sections in District 1.

The monorail, a fixed-rail system to move tourists from the airport to downtown Las Vegas via the Strip, was a major transportation issue during this period.

A short range transit study was begun by a consultant with a grant from the Urban Mass Transit Authority with the objective of determining the best transit system to serve the needs of the valley.

Also, a contract was let to do a complete air quality study for the entire area.

ADVANCED ENGINEERING AND SAFETY

The Advanced Engineering and Safety Section became operational in September 1973, and at the present time has three engineers assigned, with additional staff to be acquired in the near future.

BARRIER IMPACT TESTS



One of the prime functions of this section is to administer the Highway Safety Acts of 1966 and 1973. A safety inventory of cities and counties on nonfederal-aid routes and the Highway Department's federal-aid routes has been completed. The final report on the safety inventory was presented to the Federal Highway Administration in compliance with the Highway Safety Act of 1973.

A Traffic Control Manual was developed in cooperation with the Traffic Engineering Division and the Nevada Office of Highway Safety. This manual will provide a uniform method of traffic control and safety practices to be used by construction and maintenance personnel statewide. Copies have been provided to all Highway Department, city and county personnel.

The second prime function of this section is to analyze engineering information with which to provide recommendations to management for advance highway projects.

The activities have ranged from review of shopping centers, coordination with local planning and engineering staffs to public hearings.

During the past biennium the Highway Safety Section, with the aid of federal safety funds, continued the process of automating traffic accident records. During this period approximately 22,000 reports were encoded which enables the Department to identify and monitor hazardous locations statewide.

This section also assisted in establishing and implementing a complete photologging system of all state interest routes. The film (35 mm. color) library, when complete, will provide a photographic record that will assist in accident location and analysis, as well as a multiple of other uses. Purchase of camera and viewing equipment was obtained with federal safety (402) moneys.

TRAFFIC AND SPECIAL STUDIES

The Traffic Section carries on a program of both mechanical and manual traffic counting to continue the policy of making available current traffic statistics for the administrator, designer, planner, and for the general public. Currently, there are 30 permanent fixed traffic recorder sites located throughout the State where traffic is counted continuously 24 hours a day, 365 days a year. These sites provide the hourly, daily, and monthly factors to help project short period counts (taken at approximately 1,800 sites on state-interest roads) to annual values. These permanent traffic stations also provide historical trends of traffic which provide a base for the statistical expansion of traffic into the future.

Manual classification of vehicles on some state-interest roads is conducted at predetermined locations. These manual counts provide the factors used to adjust machine total counts down to vehicle types. Manual counts are also taken to provide information on the movement of vehicles. These counts are used by the traffic engineer in designing traffic signals, geometric highway design, and maintaining traffic flow.

The section's Annual Traffic Report with its recapitu-

lations of statewide traffic statistics on an annual daily basis was published.

The section experienced a significant increase in the demand of specialized traffic data. This included traffic for design designations, environmental reports, noise and air quality studies, traffic light warrant studies, the urban transportation studies, and the Highway Functional Classification and Needs Study.

The Special Studies Section, in conjunction with the California Department of Transportation and the Tahoe Regional Planning Agency, conducted 25,000 interviews with transient parties in the basin during the winter and summer of 1974. Data will provide input to the transportation planning process. An inventory of 28,000 living units and 12,000 hotel or motel rooms was also completed.

Updates of parking inventories were completed for Truckee Meadows and Las Vegas Valley urban areas.

Some 7,600 living units were inventoried in Carson City, samples were selected, and 2,000 interviews conducted and processed as input to the development of a transportation plan.

Under the direction of Federal Highway Administration, this section participated in the National Commodity Flow Study. Over a period of a year, 3,000 mail-back interviews were processed with Nevada truck owners.

LOCATION AND INVENTORY

The reorganization of the Planning Survey Division that occurred during the biennium correlated location, geodesy, photogrammetry and cartography under the direction of the location engineer. This reorganization reduced total personnel by 20 percent through phasing out field crews and maintaining only required personnel to administer the layout and completion of the field surveys either by working as a control field crew or by the use of Construction Division personnel when available.

STATE MAPPING



Two precision stereoplotters with electronic digitizing for data processing card output were acquired along with the correlated auxiliary equipment to accomplish the field surveys from aerial photography. An older model stereoplotter also was set up by the Federal Highway Administration for permanent loan to the Highway Department. Additional electronic survey equipment was obtained to accomplish the needed field survey control for aerial surveys.

The section completed 100 miles of partial or full field control surveys, 64 miles of aerial survey control, 35 miles of design scale topographic maps, 35 miles of aerial survey, change of the statewide planimetric maps to a quadrangle format (129 general maps and 56 supplemental maps), the manuscripts for the complete updating of the planimetric maps covering Elko County and initial compilation of same, five new urban system maps, a Nevada Map Atlas and a new Maintenance District Map.

Mapping published three governmental agencies-jurisdictional area maps, the statewide Highway Needs Study Maps, numerous aerial photographic mosaics and displays, a control survey covering the Las Vegas area and three state maps for engineering uses.

Time was spent making preliminary studies of corridors for future projects and maintaining the necessary services.

The Inventory-Roadlife Section completed a variety of special studies. These included the Stead Economic Growth Study, Railroad Crossing Pilot Study, Priority Primary Routes Study, Scenic Route Study and the I-70 Route Study.

Along with these special studies the 1974 National Transportation Study was completed and submitted to the U.S. Department of Transportation for a congressional report. The urban and rural sufficiency rating studies were completed and used as input data for the Statewide Needs Study. The Statewide Needs Study was completed and approval was given by the State Highway Board to submit it to the 1975 Session of the State Legislature.

All the normal functions of the section were completed for various reports to local, state and federal agencies.

Near the end of the biennium a reorganization of the Planning Division occurred which split the Inventory-Roadlife Section into two sections. Due to an ever increasing workload of needs studies, it was deemed necessary to set up a separate section to handle these types studies. Duties and personnel were split into the Inventory-Roadlife and the Needs and Priorities Sections.



ROAD DESIGN

Design was completed, and contracts let to bid on the unfinished portions of Interstate 80 through the Reno-Sparks area and on the remaining section of Interstate 15 through Las Vegas. Design was finished on the segment of Interstate 15 between two miles west of Mesquite and the Nevada-Arizona state line, thus closing the final gap in the interstate route crossing Southern Nevada. Designs on portions of the North-South Freeway in Reno, and the Downtown Expressway in Las Vegas, were also completed with construction underway or completed at the end of the biennium.

A new Roadway Design Manual was issued in January 1974 reflecting current design procedures and standards. Standard plans sheets, formerly included in the contract plans, have been produced in a booklet form thereby substantially reducing printing costs.

The organizational structure of the Division remained essentially the same during the biennium. However, work space was reorganized providing individual work areas for the various design groups which enhanced the Division's efficiency and control.

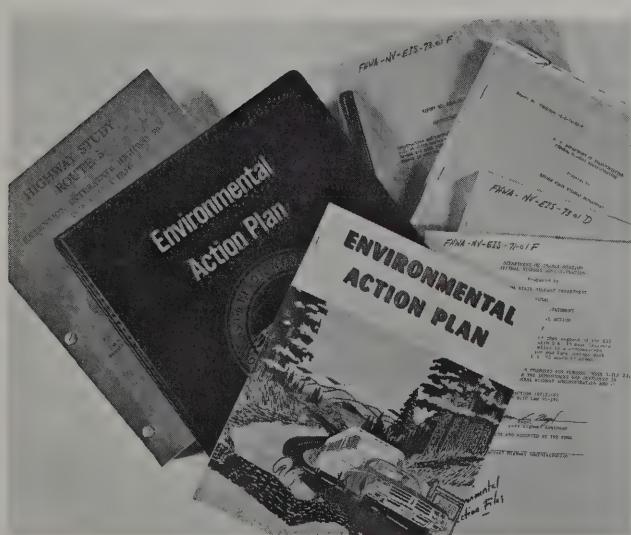
The Division began the biennium with 104 permanent employees. Since that time a reduction in force, through transfer, retirement and other attrition, has reduced the number of employees to 93 as of July 1, 1974. Of the 104 personnel employed on July 1, 1972, 93 were assigned to Roadway Design, 9 to Landscape, with 2 assigned to the Environmental Section. As of July 1, 1974, work assignments within the Division were adjusted to reflect the added emphasis on social, economic and environmental aspects of project development, with the Roadway Design Section reduced to a work force of 75, the Landscape Section to 6 and the Environmental Section increased to 12.

During the 1973-74 biennium, the Division completed construction plans on 47 contracts that included 50 projects (11 interstate, 6 primary, 6 secondary, 1 federal lands, 3 landscape, 5 TOPICS, 11 State and 7 urban) at an approximate total construction cost of \$43,000,000.

ROADSIDE DEVELOPMENT AND ENVIRONMENTAL SERVICES

Upon enactment of the National Environmental Policy Act of 1969 and the Clean Air Act of 1970 and subsequent issuance of new policies, procedures and regulations promulgated for the purpose of implementing the above acts, the planning, design, construction and maintenance of highways took on new dimensions. Major increases in the time required for project development, increase of engineering and construction costs and the requirement for new disciplines of expertise in varied fields of effort are several of the more important consequences.

Where formerly the Roadside Development Division operated within the organizational framework of the Roadway Design Division, the unit was reorganized and given independent divisional status under the direct supervision of the Assistant Deputy Highway Engineer for Engineering and Plans. This unit, working within the framework of the Department's Action Plan, is responsible for assessing and assuring that adequate consideration of social, economic and environmental impacts is given to each project including related air, noise and water quality studies. Disciplines representing the social, economic, natural and physical sciences are to be found within this Division.



The work load generated by the above-noted facts also required the utilization of consultants in order to maintain scheduled programs. In this regard the Division now is overseeing two separate contracts for environmental impact statements in the amount of \$971,360 and air quality studies in the amount of \$1,091,000 in the Reno and Las Vegas areas.

During the biennium the Environmental Section completed 32 environmental project assessments leading to negative declarations, continued work on several environmental impact statements and processed three final impact statements. The Roadside Development Section completed contract plans on two rest area sites, one landscaping contract and continued the development of plans for landscaping I-80 through Reno and the completion of the landscaping on I-15 in Las Vegas.

TRAFFIC ENGINEERING

During the biennium, the newly created District Traffic Engineers in the Reno and Las Vegas districts continued to assist the Headquarters Traffic Engineering Division by handling problems at the local level.

The first two high mast lighting projects in the State were completed on I-80 in Reno and I-15 in Las Vegas with several 100 foot high towers spreading light over two major interchanges.

There were 25 traffic signal and lighting contracts awarded during the biennium, some of which were a major part of urban roadway contracts. The cost of these totaled \$2,613,639 for traffic signal and lighting items and included 5 TOPICS projects (Traffic Operations Program to Increase Capacity and Safety).

STRUCTURAL DESIGN

The organization of the Bridge Division remained essentially the same for the biennium. However, one retirement, one transfer and two terminations have reduced the number of employees by four people.

A slight decrease in work load attributable to decreased federal highway funds and gasoline tax revenues made it unnecessary to refill the four vacated positions at this time.

Design of the Carlin Canyon tunnels, the largest project ever undertaken by the Bridge Division, was completed and construction started early in this biennium.

The Vine Street Bridge, spanning Interstate 80 in Reno, also was designed and constructed during the past two years. It contained five spans, the longest of which has a length of 225 feet and is the longest span in the State. Using a combination of high strength steel

and concrete, it was feasible to design a structure with long slender lines that lend to its outstanding aesthetics.

Much emphasis continued to be placed on bridge replacement projects to eliminate obsolete and unsafe bridges. During this biennium seven bridge structures were programmed for replacement and the projects made ready for contract.

Existing computer programs for design of structures were kept current by continuously upgrading them. New computer programs were developed for ultimate strength design of bridge columns and for the design of single, double and triple cell reinforced concrete box culverts.

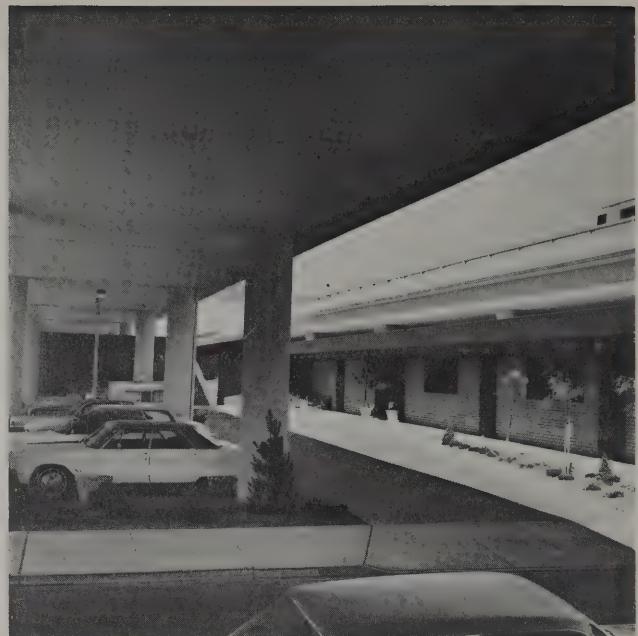
An inventory of all the existing bridges in the State was being computerized. This program will make readily available any information desired about an existing bridge or a group of bridges by simply running the appropriate computer program. One of the most important items included in this inventory is the ultimate load carrying capacity of each bridge.

Each bridge structure in the State had an inspection made on it during the biennium by the Bridge Division to determine if any maintenance is required. Each year additional bridges are constructed thus adding to the number of bridges to be inspected and maintained.

Over the past 2 years five structures were built on Interstate 80, seven on Interstate 15, eight on the primary system, and three on the secondary system. The number of structures built according to county were: Clark, 10; Elko, 3; Lincoln, 1; Nye, 1; Pershing, 2; and Washoe, 6.



I-80/U.S. 395 INTERCHANGE



MULTIPLE USE OF RIGHT-OF-WAY

RIGHT-OF-WAY

During the period of the 1973-74 biennium, the Right-of-Way Division reduced its work force from 98 employees to 82, in accordance with management directives. However, service was maintained by short-term transfers of key personnel and by the employment of fee appraisers.

Final acquisitions for Interstate 80 in Reno and Sparks and Interstate 15 in Las Vegas and North Las Vegas were completed successfully during this period and the utilization of airspace either above the Interstate or below its viaducts was greatly expanded.

Two spectacular airspace uses were the multimillion dollar expansion of the Sparks Nugget complex underneath the I-80 Sparks viaduct and the construction by Valley Forge Corporation of a platform or deck over I-80 between Virginia and Center Streets in downtown Reno. The platform is designed to support a 15-story building that will be part of a hotel-casino complex.

Two other unusual right-of-way activities undertaken were the functional replacement of the old jail facility in Lovelock, which was required for the construction of I-80 there, and the functional replacement of a portion of the Adcock Elementary School in Las Vegas. These were the first uses of this concept by the Highway Department.

The Right-of-Way Engineering Section now is fully utilizing topographic photography in the preparation of right-of-way plans and maps. Additionally, during the

biennium, this section phased out all of its old, mechanical calculators, replacing them with highly sophisticated, electronic models which operate silently and at much higher speeds during the complex calculations which require precise accuracy. In this period, this section also arranged for and conducted a joint conference between the Highway Department and the Bureau of Land Management to promote a better understanding of each agency's mutual problems.

Advanced and specialized education for Right-of-Way personnel was greatly expanded, particularly in the appraisal function, to assure that the Department continues to have competent and well-trained employees.

PROGRAMMING AND PROJECT MANAGEMENT

The 1973 Federal-aid Highway Act created seven new classes of federal funds and deleted three old classes of funds. The Department now receives seven categories of regular federal-aid funds, six categories of safety funds, two categories of planning funds, three categories of beautification funds and one category of advanced right-of-way funds. The Department was assigned the administrative responsibility for special demonstration funds for the City of Elko railroad relocation project. Also, the Department is eligible for public lands highway funds upon specific request and approval for individual projects.

Effective July 1, 1974, the U.S. Department of Transportation transferred the responsibility for the Forest Highway Program to the Department creating an additional category of funds. Also, the Department has been assigned the responsibility of managing U.S. Urban Mass Transportation grants for transportation services for the elderly and handicapped.

The Federal-Aid Programs Section is responsible for the programming of all federal-aid projects to the Federal Highway Administration to establish participation in and commit federal funds to proposed highway projects. The Federal Highway Administration continued to restrict and manipulate obligation authority during the biennium. The Program Section was able to take advantage of the authority manipulation and obligated \$74 million during the biennium which was \$16.5 million more than the announced obligation authority for the biennium. The obligations required a total of 279 individual program submittals which is a 30 percent increase over the previous biennium. In the next two years the section will be required to expand its efforts to meet the goals of the Department and manipulation of federal funding.

The Project Management Section is responsible for establishing and maintaining project scheduling and monitoring systems. During the biennium the section completed an update of the final phase of the monitoring system and converted all projects to the updated network. Complete revisions of project schedules were required at least every six months to meet changing financial situations and federal regulations. In the next two years, the section will revamp the entire system to encompass new procedures and regulations and to provide more information to the Department to aid in the decision making process. Also, the section is charged with the completion of "Project Certification Acceptance" procedures which will eliminate most of the project review, approval, and inspection requirements by the Federal Highway Administration.



LEGAL SERVICES

During the biennium, the Department's legal force was involved in the following property condemnation court cases:

Parcels referred for condemnation.....	43
Parcels purchased after condemnation referral.....	14
Condemnation cases filed.....	61
Cases settled.....	30
Cases appealed.....	1
Cases tried.....	14
Pending condemnation cases, July 1, 1972.....	41
Pending condemnation cases, June 30, 1974.....	45

Tort (civil suits for personal injury or property damage) litigation during the two-year period ending June 30, 1974, was as follows:

Claims filed against Department.....	26
Suits filed against the Department.....	12
Cases settled or dismissed.....	6
Cases tried.....	2
Cases pending.....	23

As chairman of the Department's Contract Review Board, the chief counsel reviewed 8 contractors' claims against the agency during this biennium.

The office prepared prospective legislation which the Department proposed to the 1973 Session of the Nevada Legislature for its consideration. Many appearances were made by counsel with Department personnel before legislative committees in support of the legislation and other bills affecting the Department's interests and operations.

INDUSTRIAL RELATIONS

Industrial Relations Division had several staff changes during the past two years. Mark Hull was appointed the Industrial Relations Manager and Larry Sherrod the Highway Personnel Officer. The Personnel Section in this biennium began the first payment of longevity to some 585 employees and in addition paid a tool allowance to 85 employees who provide their own tools in order to perform their jobs. In addition the section developed a position identification report that will enable management to obtain maximum utilization of its work force. It also met with management and supervisors throughout the Department to discuss and distribute new copies of the Rules for State Personnel Administration. A review of the employee and supervisor guide to Prohibitions and Penalties was instituted at the close of the biennium in order to issue new guides to employees in the second half of 1974. The section completed or requested review on some 112 classification requests for the period July 1972 through July 1974.

The total work force of the Department dropped from some 1,532 employees in 1972 to 1,295 employees in 1974. Because of this reduction in work force, it was necessary for the section to carefully review each request for filling vacant positions or establishing new positions to ensure maximum utilization of the work force through proper position classification and pay.

Training programs continued in the areas of equipment operations, driver training, field testing, construction inspection, highway design, management development, engineering in training curriculum and basic education. The Civil Engineer Rotation Program was temporarily suspended, but it is anticipated it will be reinstated in the near future. Development work was completed for courses in upper management and two programs were presented during the biennium and met their expected goals.

The Training Section continued administration of high school equivalency tests on a statewide basis and to date 135 employees have successfully completed and received certificates.

Several courses were held to upgrade the skills of personnel involved in the fields of ecological economics of highway design, highway safety, noise pollution, water quality and computerized design of highway systems.

Intensive cross-training of personnel in all areas was initiated. This action was a result of the reduction in the work force made necessary by curtailment of Federal Highway funds. This program will be extended into the next biennium to enable the Department's work force to furnish services to the public at the highest level of efficiency on a continuing basis.

Governor O'Callaghan directed all state agencies to complete work performance standards by September 30, 1974. This task was assigned to the Training Section and completed on schedule. While maintenance of this program will become a Personnel function, the Training Section will be responsible for developing programs to inform management and supervisors in how to utilize work performance standards in completing necessary employee development reports.

The Department's programs have been supported by the State Department of Vocational Education, the Federal Highway Administration and the National Highway Institute, whose financial assistance and technical guidance have made the Department's programs more successful than they could have been without their support.

Responsibility for the Internal Equal Opportunity Program was assigned to the Highway Department's Business Manager.



MECHANICS TRAINING

During the last two years, the Department has undergone a reduction in its work force due to budgetary limitations; therefore, the activity in the internal equal opportunity area was limited. In May 1973, the State Highway Engineer authorized a limited hiring program, and every effort was made to insure that minorities and women were informed of positions for which the Department is recruiting.

A discrimination complaint procedure was developed and disseminated to all employees. It provided those employees who feel that they had been discriminated against on the basis of race, religion, national origin, age or sex to make their complaint known, and the Department's Business Manager to authorize an investigation and take corrective action if the discrimination was found to exist.

A new position of Civil Rights Officer was established in June 1974, and the person hired made responsible for all internal equal opportunity activities and directed to report to the Business Manager.



DATA PROCESSING

The Nevada State Computer Facility purchased a larger, more capable computer system to improve service to its users and to provide an expanded teleprocessing capability for the State's growth in data processing.

Highway has planned and is developing a comprehensive system of data base computer files using cathode ray terminal devices providing the user direct data input and access to file information.

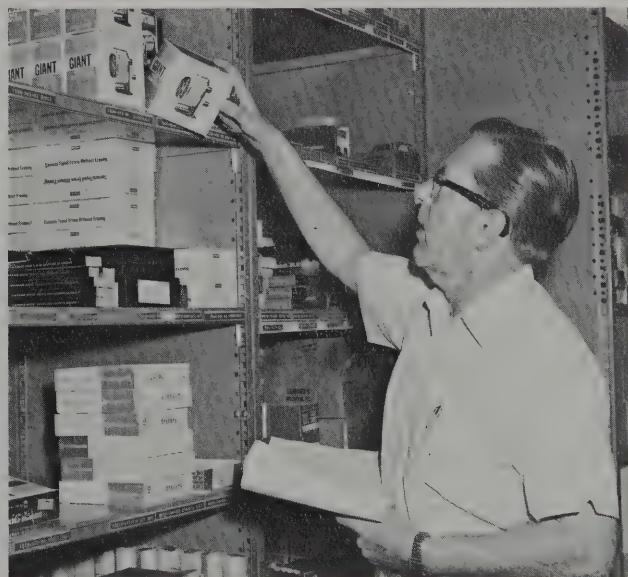
The first system developed and in operation is the general ledger portion of the new Highway Accounting and Finance System. Accounting and finance systems will be expanded along with teleprocessing capabilities in other Highway operation divisions.

PURCHASING AND STORES

The Purchasing and Stores Section experienced several changes since the last biennium. With the fiscal restrictions imposed to the overall Highway program the primary objective was maintaining economical control in the areas of equipment and material purchases. Proper utilization of surplus property and reducing of stock levels to maintain less monetary encumbrances was emphasized.

In the past two years the Department has experienced better efficiency in processing purchase requests with the FMIRS (Financial Management Information Reporting System) accounting system. Effort was made to streamline and expedite the processing of Highway orders with State Purchasing. The section currently is converting the Highway Stock Catalog Number Identification System to a less cumbersome four-digit instead of the present seven-digit system.

Statistically, the stockroom operation maintained a balanced number of items in stock. As of July 1, 1974, the stock inventory had a value of \$112,183.66 which shows a reduction (\$5,746.66) from the previous year's inventory which was valued at \$117,930.32. The cost of acquisition of supplies during the 1973-74 years totaled \$1,243,341.20. This is a reduction of \$14,288.98 from the previous biennium. The budgeted amount for equipment during the biennium amounted to \$480,880 of which a total of \$394,534 was expended or obligated. Some \$127,159 is presently budgeted for 1974-75 equipment purchases. The inventory valuation of Highway nonrental equipment rose to 16,616 items valued at \$4,363,611.72.



A \$4.3 MILLION INVENTORY



ADMINISTRATIVE SERVICES

Organization of the Administrative Services Division was altered during the biennium to incorporate contract services, records management, office services, transportation permits, buildings and grounds, and systems and methods activities.

New word processing equipment was acquired to cut time and costs in contract preparation. Procedures were modified to improve the processing of consultant agreements, issuance of permits, and service to contractors.

Throughout most of the biennial period, buildings and grounds personnel were engaged in rearranging office space in headquarters to permit the reassignment of employees to the construction and planning divisions. Additional office and work space was provided and the privacy of the individual worker improved through this effort.

A telecopier-transceiver service was installed on a trial basis to speed up the processing of transportation permits. In 1972 the office provided 20 permits per month; in 1974, over 2,100 were handled during a six-month period. Among the permits issued during the past two years were 246 for over-length tractor-trailer combinations in the 70- to 105-foot range.

ACCOUNTING AND AUDITING

Three major programs were undertaken by Accounting during the biennium. These activities were designed to improve the ability of the agency to accurately determine its financial position.

With the help of a consultant firm, Accounting modified its procedures to provide an integrated general ledger entry system and an improved use of computer facilities for fiscal reporting.

New financial reports were developed for management use in monitoring the income and expenditures of the Department. Means to project future revenues and expenses also were improved.



REMOTE COMPUTER ACCESS

Attention was focused on expanding direct access to computer facilities through terminal input. New programs were developed and are being implemented to insure maximum use of the latest data processing technology.

Internal Audit departed from its usual audit activities during the past fiscal period to assist Accounting in developing new procedures. Audit personnel also established a project ledger as an aid to management in project planning and control.

NEVADA HIGHWAYS AND PARKS MAGAZINE

Nevada Highways and Parks magazine has diversified its activities considerably in the past biennium, placing greater emphasis on promotional activities. One example was the magazine's display, with the Governor participating, at the California State Fair in Sacramento in 1973.

Nevada calendars have gained annually in sales as have binders and binder sets. The magazine has contracted a major national distributor who is handling calendars as well as the magazine and early indications show hopes of steady increases in revenue.

PUBLIC INFORMATION

During the past two years, major changes occurred within the public and employee information program. Because of financial problems, drastic cuts were made in the operation and personnel areas.

A number of activities and services were deleted in the last year of the biennium, including publication of the *Highway News*, the employee newsletter; the official state highway map; and several periodic construction reports. However, it was hoped that funds would be available to reestablish these publications in the 1975-76 biennial period.

Despite cutbacks, the program continued to support the Department's public hearing needs, assist in the production of technical reports and films, provide a full-level of photo service to all divisions, and maintain contact with the State's various news media.



PUBLIC HIGHWAY BOARD MEETINGS

Reorganization in the administrative area for a time placed the Public Information Division under the umbrella structure of Administrative Services. But, the need to be more responsive to the agency head and his deputies resulted in reassigning it to the Highway Engineer.

Loss of district-level information personnel seriously reduced the service level outside the headquarters area. A minimum of support was provided for localized activities during the latter half of the biennium.



HIGHWAY PUBLIC HEARINGS

NEVADA DEPARTMENT OF HIGHWAYS

1263 So. Stewart Street
Carson City, Nevada 89701

STATE HIGHWAY BOARD OF DIRECTORS

MIKE O'CALLAGHAN, Governor.....	Chairman
ROBERT LIST, Attorney General.....	Member
WILSON McGOWAN, Controller.....	Member

EXECUTIVE STAFF

GRANT BASTIAN.....	State Highway Engineer
DONALD J. CROSBY.....	Deputy Highway Engineer (Engineering and Planning)
WILLIAM H. SHEWAN.....	Deputy Highway Engineer (Operations)
L. G. PHELPS.....	Business Manager
WILLIAM F. ENGEL.....	Executive Assistant; Secretary, Highway Board
R. ALBERTINI.....	Supervisor, Internal Audit
FRANK SMYTH.....	Public Information Officer

ENGINEERING AND PLANNING

WILLIAM NAGEL.....	Assistant Deputy Highway Engineer
ROBERT SHARP.....	Chief Design Engineer
HUGH BRINSON.....	Chief Structural Engineer
LAURNAL GUBLER.....	Supervisor Roadside Development and Environmental Services
RUSSELL HILL.....	Chief Traffic Engineer
GEORGE WESTENHOFER.....	Chief Planning Engineer
ELDREDGE T. PORCH.....	Chief Right-of-Way Agent
IVAN LAIRD.....	Programming Engineer
MELVIN L. BEAUCHAMP.....	Chief Counsel

OPERATIONS

G. KEITH LAYTON.....	Assistant Deputy Highway Engineer
EDWARD MARRIAGE.....	Chief Construction Engineer
HOMER M. ANRIG.....	Chief Maintenance Engineer
LARRY HOUGH.....	Contract Compliance and EO
RICHARD W. ACHESON.....	Equipment Superintendent
JAMES DESMOND.....	Chief Materials and Testing Engineer
JOHN MACDONALD.....	Communications Specialist
JOSEPH MOORE.....	Safety Supervisor

ADMINISTRATIVE SUPPORT

CLARENCE S. EICHE.....	Chief Accountant
MARK HULL.....	Industrial Relations Manager
CURTIS FOLTZ.....	Data Processing Manager
JOHN CERCEK.....	Administrative Officer (Acting)
WILLIAM MOON.....	Civil Rights Officer
RICHARD CANATSEY.....	Chief Pilot
DONALD L. BOWERS.....	Highways and Parks Magazine Editor

DISTRICT ENGINEERS

JACK PARVIN.....	District One, Las Vegas
MICHAEL J. COLLETTI.....	District Two, Sparks
OWEN JOSEPH.....	District Three, Elko
ALLAN K. DALBEY.....	District Four, East Ely
HERBERT ADAMS.....	District Five, Tonopah
JOSEPH A. SOUZA.....	District Six, Winnemucca



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